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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,241	11/22/2000	Yu Wang	RD-27,500/USA	8371

7590 02/28/2002

General Electric Company
CRD Patent Docket Rm 4A59
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P.O. Box 8
Schenectady, NY 12301

EXAMINER

PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 02/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/718,241

Applicant(s)

WANG ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 25 January 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

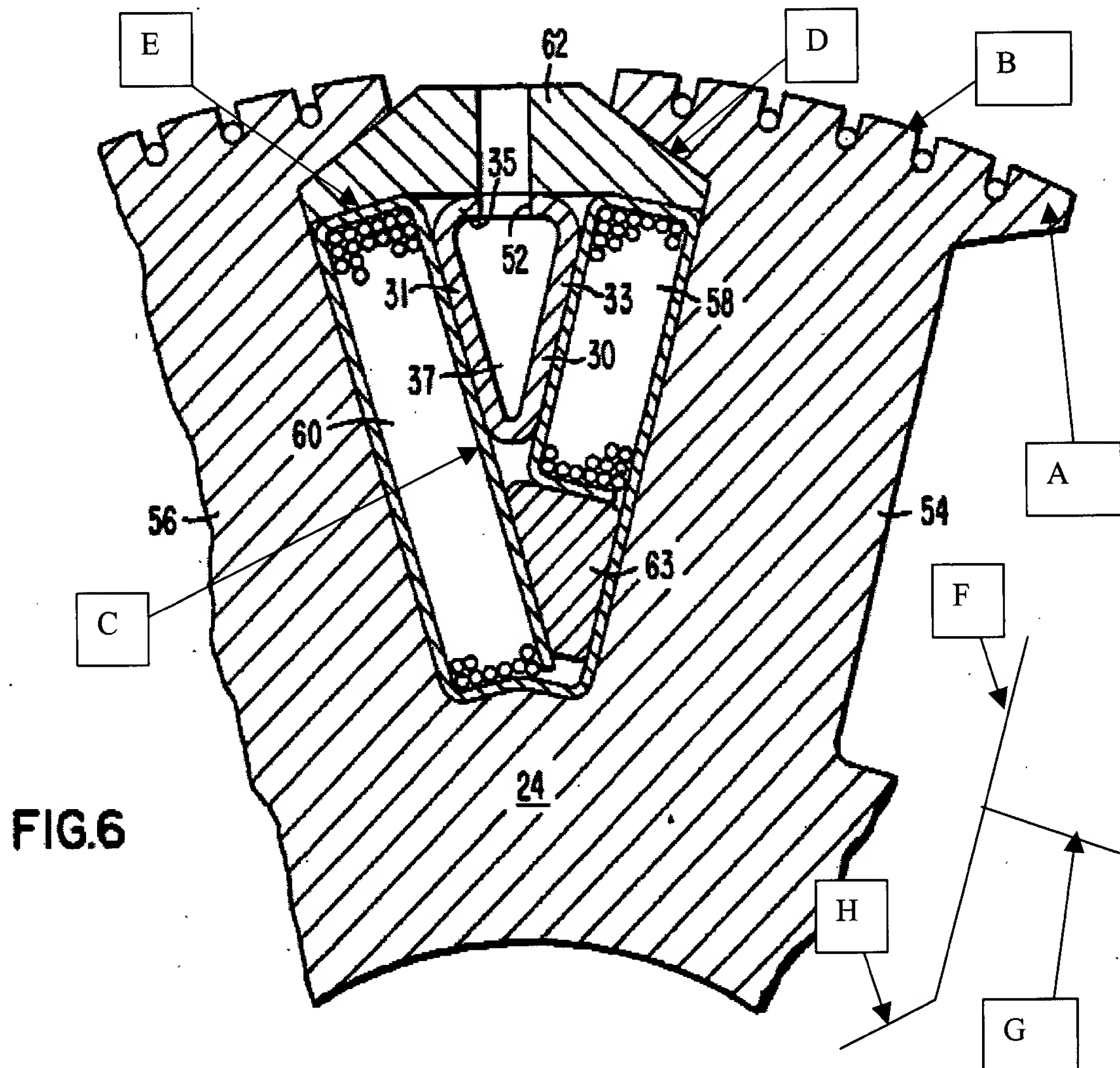
1. Claims 6, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by McCabria (U. S. Pat. 4,409,502).

Referring to claim 6, McCabria discloses a multi-pole electric machine rotor assembly comprising:

a rotor forging including a rotor body (24) having poles (54,56) directed along a direct axis (F) with pole faces (B) extending generally perpendicularly to a direct axis (F), and fins (A) extending along a quadrature axis (G);

a winding module including a plurality of field windings (58,60) positioned in spaces between the pole faces (B) and the fins (A), and a winding insulator (C) disposed between each successive pair of the field windings (58,60), respectively; and

a winding block (62) disposed between the winding module (58,60) and a corresponding one of the fins (A) in each respective one of the spaces between the pole faces (B) and the fins (A).



Referring to claim 11, McCabria discloses that the winding block (62) comprises a support surface (D) engaging the corresponding one of the fins (A) and a tapered surface (E) engaging the winding module (58,60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tajima (U. S. Pat. 5,036,238).

Tajima discloses a rotor assembly comprising:

- a rotor forging including a rotor body (8) having pole faces (1);
- a winding module including a plurality of field windings (3) positioned adjacent the pole faces (1) and a winding insulator (7) disposed, respectively, between each pair of successive field windings (3), respectively; and
- a winding block (5) disposed in engagement with the winding module (3) and shaped to be shifted to a final position relative to the winding module (3) when the rotor assembly rotates at about its rated speed to thereby compress the winding module (3).

Tajima discloses that the winding block (5) comprises a tapered surface engaging the winding module (3).

Tajima discloses that the tapered surface friction coefficient is selected such that the winding block (5) is shifted to the final position relative to the winding module (3) when the rotor assembly rotates at about its rated speed.

Tajima discloses that the winding block (5) is formed of a flexible insulating material.

Tajima discloses that the winding block (5) is fixed in its position on the rotor assembly, and wherein the winding module (3) is displaced across the winding block (5) when the rotor assembly rotates at about its rated speed.

It would have been obvious at the time the invention was made to know that the spring in Tajima was capable of adjusting the position of the winding block under external forces like centrifugal forces, thermal expansion and materials aging.

3. Claims 7-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over McCabria.

McCabria discloses a multi-pole electric machine rotor assembly as described on item 1 above. McCabria discloses that the winding block (62) is detached from the fins (A) and the winding module (58,60). McCabria discloses that the winding block (62) comprises a support surface (D) engaging the corresponding one of the fins (A) and a tapered surface (E) engaging the winding module (58,60).

It would have been obvious at the time the invention was made to know that the winding block (62) was movably detached from its position since the winding block is an individual piece being pressed by centrifugal forces, which necessarily produce a displacement between of the block.

4. Claims 7-10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCabria in view of Tajima.

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McCabria discloses a multi-pole electric machine rotor assembly as described on item 3 above. However, McCabria does not disclose that the tapered surface angle is selected such that the winding block is shifted to a final position when the rotor assembly rotates at about its rated speed. McCabria does not disclose that the tapered surface friction coefficient is selected such that the winding block is shifted to a final position when the rotor assembly rotates at about its rated speed.

Tajima discloses that the tapered surface angle is selected such that the winding block (5) is shifted to a final position when the rotor assembly rotates at about its rated speed. Tajima discloses that the tapered surface friction coefficient is selected such that the winding block (5) is shifted to a final position when the rotor assembly rotates at about its rated speed. Tajima's invention has the purpose of utilizing the restoring forces of the elastic members and thereby holding field coils without causing any great change in the holding forces thereof even against any type of a dimensional change.

It would have been obvious at the time the invention was made to modify the multi-pole electric machine rotor assembly of McCabria and provide it with the winding block configuration disclosed by Tajima for the purpose of utilizing the restoring forces of the elastic members and thereby holding field coils without causing any great change in the holding forces thereof even against any type of a dimensional change.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCabria in view of Kleemann (U. S. Pat. 5,015,904).

McCabria discloses a multi-pole electric machine rotor assembly as described on item 3 above. However, McCabria does not disclose that the winding block is formed of a flexible insulating material.

Kleemann discloses that the winding block (17) is formed of a flexible insulating material (column 2, lines 51-54). Kleemann's invention has the purpose of improving reliability and performance of the electric machine.

It would have been obvious at the time the invention was made to modify the multi-pole electric machine rotor assembly of McCabria and provide it with the winding block material disclosed by Kleemann for the purpose of improving reliability and performance of the electric machine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
February 23, 2002



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